

Fractions – The Basics

Name:

Date:

Period:

Fractions are numbers that represent some portion of a whole thing (or of a group of things).

For example, if you ate 3 of 8 slices of a pizza, assuming the slices are all the same size, you would say that you ate $\frac{3}{8}$ of a whole pizza.

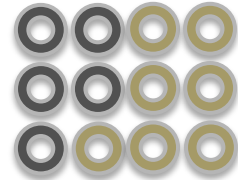
In the fraction, the bottom number (the *denominator*) tells you how many equal parts make up the whole thing (or how many are in the group).

numerator → $\frac{3}{8}$
denominator →



The top number (the *numerator*) tells you the portion of the whole thing (group) that is being considered.

For example, $\frac{5}{12}$ could represent that five donuts out of a dozen (a dozen is a group of 12 objects) are chocolate while the rest are maple donuts.



A fraction with a numerator that is greater than its denominator represents an amount greater than one.

$\frac{5}{4}$ could indicate that you have five slices of pizza that are left over from two

pizzas that were each cut into four equal slices. You would have pizzas $1\frac{1}{4}$ left over.

Adding and Subtracting Fractions

When adding or subtracting fractions you must rewrite the fraction as fractions that are equivalent to the fractions being added (or subtracted) and that have a common denominator. You can think of it as cutting the pizzas slices into equal size slices.

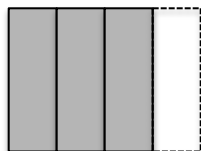
For example: $\frac{3}{4} + \frac{1}{3} = \frac{9}{12} + \frac{4}{12} = \frac{13}{12} = 1\frac{1}{12}$

Oh good! There is more than a whole pizza left over!

Multiplying Fractions

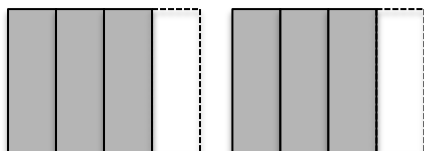
So, what takes place if you multiply a fraction by another fraction?

Start by thinking about a whole number amount of some fraction. Think about $\frac{3}{4}$ of a candy bar.



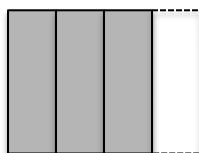
Two times that amount would be a total of $\frac{6}{4}$ a candy bar.

$$2 \times \frac{3}{4} = \frac{6}{4}$$



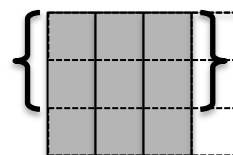
One time that amount would be a total of $\frac{3}{4}$ a candy bar.

$$1 \times \frac{3}{4} = \frac{3}{4}$$



What about a fraction of the $\frac{3}{4}$ of a candy bar?

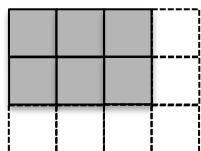
Consider $\frac{2}{3}$ of the of $\frac{3}{4}$ the candy bar.



Multiplying $\frac{2}{3}$ times $\frac{3}{4}$ is like determining $\frac{2}{3}$ of $\frac{3}{4}$ of a candy bar.

It happens to be the same as multiplying the numerators to get a new numerator and multiplying the denominators to get a new denominator.

$$\frac{2}{3} \times \frac{3}{4} = \frac{6}{12}$$



$$= \frac{1}{2}$$

